

## CLAIMS

I Claim:

1. Mixing and reducing machine comprising an upward-conveying mixing spiral that rotates around a vertical rotational axle, characterized in that, a first mixing spiral (11.1 – 13.2),  
5 and a second mixing spiral (14.1 – 16.2) are arranged in the axial direction, whereby between the mixing spirals (11.1 – 13.2; 14.1 – 16.2) a transition zone (19) extends in the axial direction.

2. Mixing and reducing machine according to claim 1, characterized in that, the transition zone (19) is free of a mixing spiral.

3. Mixing and reducing machine according to claim 1, characterized in that, the two mixing spirals (11.1 – 13.2; 14.1 – 16.2) have different axial conveyed quantities.

4. Mixing and reducing machine according to claim 3, characterized in that, the two mixing spirals (11.1 – 13.2; 14.1 – 16.2) have different helix angles.

5. Mixing and reducing machine according to claim 3, characterized in that, the two mixing spirals (11.1 – 13.2; 14.1 – 16.2) have different spiral blade widths.

6. Mixing and reducing machine according to claim 3, characterized in that, the two mixing spirals (11.1 – 13.2; 14.1 – 16.2) have different rotational speeds.

7. Mixing and reducing machine according to claim 1, characterized in that, the two mixing spirals (11.1 – 13.2; 14.1 – 16.2) have different rotational directions.

8. Mixing and reducing machine, according to claim 1, wherein said spiral is interrupted  
5 in the circumferential direction and wherein said spiral is further comprised of mixing blades (11.1, 12.1, 13.1, 11.2, 12.2, 13.2; 14.1, 15.1, 16.1, 14.2, 15.2, 16.2) connected one after the other.

9. Mixing and reducing machine according to claim 8, characterized in that, said mixing blades (11.1 – 16.2) have a lifting edge (18) that is bent upwards on their trailing ends in the rotational direction.

10. Mixing and reducing machine according to claim 8, wherein said mixing blades (11.1/2 to 16.1/2) arranged essentially one above the other are connected through a blade carrier (17) set in the rotational direction.

11. Mixing and reducing machine according to claim 8, characterized in that, the mixing blades (11.1 – 16.2) are attached through carrier arms (20) onto a central shaft (8), the front surface (22) of which is chamfered, at least in sections, increasing radially to the outside

